South African Medical Journal
Suid-Afrikaanse Tydskrif vir Geneeskunde

Vol. 24, No. 5. Cape Town, 4 February 1950 Weekly 2s.

COMBINED (INTRA- AND EXTRA-UTERINE) FULL-TERM LIVING PREGNANCIES

R. THERON, M.R.C.S., M.D., LOND.
Bloemfontein

This case is reported because of its extreme rarity and of certain interesting features. There is also the remarkable coincidence that a similar case had occurred in the same Province about six months earlier, reported by Gilliland.[1] Also, in the same week of its occurrence, another report of a similar case from Nigeria by Fejer and Henry[2] became available. All three were in African women.

The patient was a Bantu woman aged 30 years, who had had three previous live births. She was sent into hospital on 3 July from a country district, about 80 miles away, having given birth to a living male infant, weighing 6 lb. 11 oz., 11 days before. The labour had been spontaneous and the placenta had come away after 15 minutes. It was stated that there was another baby, which could not be born. She felt movements and had been having more severe after pains than usual. This pregnancy, which had gone to full term, as far as she knew, had been a most uncomfortable one. At about two months' gestation she had had severe abdominal pain and some vaginal bleeding.

She was a somewhat under-nourished woman in fair condition, but there was considerable pallor of the mucosae. The pulse rate was 110 per minute and the blood pressure 105/70 mm. Hg. Her heart and respiratory system revealed no abnormality. In the abdomen there was a large mass, irregularly rounded in shape, mainly to the right of the mid-line and rather tender. It extended from the pubis to just under the right costal margin. Medially there was a notch at the level of the umbilicus. Foetal parts could not be distinguished, but a foetal heart could be heard faintly to the right and above the umbilicus. An X-ray picture taken the next day revealed a foetus in a peculiar position. The head was flexed anteriorly and lay above the level of the pubis, while the body was arched to a higher level towards the right, ending with the feet to the right and lower than the head. Vaginal examination, afterwards repeated under anaesthesia, revealed the patulous cervix lying high up behind the symphysis and a puerperal uterus nearly in the mid-line apparently empty. The diagnosis of an extra-uterine pregnancy was therefore practically certain.

At operation on 5 July, under gas and oxygen anaesthesia, I found a puerperal uterus with the right broad ligament distended up above the level of the umbilicus. It looked very like a pregnancy in one side of a double uterus. There was some old blood clot in the pelvis, matting some coils of intestine behind the uterus. The tube was thinly stretched over the gestation sac and ended medially behind and adherent to the uterus. The adnexa on the left were extensively involved in adhesions, mostly recent. Probably there had originally been an intra-ligamentary rupture of the pregnant tube.

The sac, which was quite thick walled, was incised at a prominent part between the right round ligament and the tube. The foetus was delivered by the vertex. It was a living female and weighed 4 lb. 6 oz. It breathed at once, but never cried vigorously. It was grossly deformed, apparently from its cramped position in the abdomen. Its spine had a marked scoliosis and kyphosis, the left side of the chest being considerably depressed. There was inversion of both ankles and wrists and the feet were splayed flat. This child never breathed well and lived for only 12 hours.

The placenta was attached to the bottom of the sac. Its removal would have been extremely hazardous, if not impossible. It might be noted that Fejer and Henry,[2] after removing the placenta, could not stop the bleeding and were obliged to remove the uterus. After cutting the cord short, some penicillin solution was poured into it. This was probably unnecessary and actually proved useless. The thick sac wall, which was bleeding slightly, was sutured and the abdomen closed, without further interference.

Progress. There was considerable post-operative shock, so 1,000 c.c. of whole blood was transfused. She was put on a course of penicillin injections and on sulphadiazine by mouth. Later during her stormy convalescence she again received a blood transfusion. On the eighth post-operative day she developed broncho-

pneumonia. Her life was almost despaired of, but on treatment with streptomycin she recovered from that complication and, by the twentieth day, was able to walk about the ward. However, by 3 August pyrexia was increasing again, there was more pain in the abdomen and the swelling on the right had enlarged and was fluctuating. On vaginal exploration one found that it could be drained by colpotomy. This was accordingly done and six pints of offensive, brownish pus came away. A drainage tube was stitched in. She felt much better and drainage continued, but the tube evidently came away too soon.

On 21 August she developed a deep thrombosis in her right leg and had repeated rigors. Intravenous heparin, followed by oral dicumarol, was administered, until the prothrombin index was 40%. This low level was maintained for a week with good result. In the meantime the abdominal mass was again increasing in size, vaginal drainage having ceased. This was re-established on 3 September and a larger tube than before stitched in. The tube came away four days later, followed soon by a large piece of decomposed placenta. This proved to be the turning point from which she steadily improved. She was discharged on 5 October with the living baby which had thrived on artificial feeding. No swelling could then be felt abdominally and she had little, if any, discomfort, nor was she having any trouble with bowel actions.

DISCUSSION

A distinction should be drawn between 'combined' and 'compound' intra- and extra-uterine pregnancies. The latter term, Norvak suggests, should be reserved for cases in which the two pregnancies are not simultaneous and concurrent, e.g. where a woman with a lithopaedion has subsequent pregnancies.

Incidence. The world literature on combined pregnancies has been reviewed several times in recent years, notably by Novak (1926),[3] Ludwig (1940),[4] Mitra (1940),[5] and DeVoe and Pratt (1948).[6]

The first case of combined pregnancy is said to have been recorded by Duverney in 1708, diagnosed at autopsy. Novak found that, up to 1913, 244 cases had been recorded. He found another 32 (276 in all) in the next 12 years. He states, however, that the condition is 'commonly unrecognized' and that, therefore, this number is probably only a fraction of those which have been observed.

Those cases in which both pregnancies go to full term are hardly likely to go unobserved, yet Novak could find only nine cases where both embryos reached term and were extracted alive. He states that there is a considerably larger group, in which both pregnancies continued to full term, with delivery of the live intra-uterine foetus and the operative removal, often at a considerably later period, of the dead extra-uterine embryo. DeVoe and Pratt (1948) bring the sum total of reported and authenticated combined pregnancies to 395. In these reviews, as far as one can make out, only 14 of these were cases in which both children were born, or extracted alive. DeVoe and Pratt calculate that the incidence of combined pregnancies is probably about 0.003% of all pregnancies. In the Mayo Clinic there were two cases in 13,527 deliveries, or 0.015%. The incidence of cases where both children are delivered alive is therefore a small fraction of that percentage. This works out to between one and five in a million pregnancies.

Diagnosis. Novak[3] says: 'Much more difficult, though fortunately much less frequent, are the cases in which pregnancy has advanced to a later stage before untoward symptoms develop. If death of the extra-uterine embryo can be established, which will rarely be the case, the treatment is the same as that in the early stages, i.e. laparotomy, with removal of the ectopic pregnancy. So far as I know, it has not been possible in any reported case, to diagnose the presence of a living intra-uterine and a living extra-uterine baby in late pregnancy, or at term, before the onset of labour. It is not until the birth of the uterine child that the presence or location of the extra-uterine is recognized.' That is exactly what happened in this case and in the other two mentioned. Gilliland made interesting use of lipiodol injection into the uterus, but we did not find that necessary. The peculiarly cramped attitude of the extra-uterine foetus in this case, which would probably also have been demonstrable before the birth of the other, had she been X-rayed, would have been a strong indication. Together with other signs, then, it might have been possible to make the diagnosis.

TREATMENT

Novak[3] states that expectant treatment would seem to be justified in cases in which two live embryos are recognized in the later months of pregnancy, with the performance of abdominal section as soon as labour sets in. In view of the outcome of quite a number of cases that have now been recorded, one would disagree with that statement and suggest that in all cases nature be given a fair chance first to expel the intra-uterine foetus. The remarkable and well-known stoic attitude of the Bantu towards suffering in child birth might, however, have had a lot to do with the happy outcome in these cases.

In these, as in all cases of advanced extra-uterine pregnancy, modern opinion inclines to the view that the placenta should be left *in situ* and the abdomen closed without drainage, unless there is a certainty that haemorrhage from vessels to the placenta can be controlled by ligature at the time of removal.

Reviewing 69 cases in 1940, Mason[7] found a mortality of 18.8%; 75% of the recoveries occurred in cases where the placenta was easily removed, or where no attempt was made to remove it. There was no death when the placenta was left *in situ* and the abdomen closed without drainage; whereas a rate of 22.7% of mortality occurred when marsupialization or drainage was instituted after leaving the placenta alone Even in cases where the placenta could easily be removed, the mortality was increased by packing or drainage. This author was of the opinion that necrosis of the placenta was a physiological process and that the organ should be left *in situ*.

While an attempt at removing the placenta necessitated the removal of the uterus in Fejer and Henry's case,[2] a very smooth convalescence followed the correct

procedure in Gilliland's case.[1] Moreover, in spite of the very stormy convalescence in my case, I believe the procedure of not attempting removal was also justified. Furthermore, this case has demonstrated how easily vaginal drainage could be instituted at a later date should it, on account of suppuration, unfortunately become necessary.

SUMMARY

A case of combined living full-term intra- and extra-uterine pregnancy is described.

Reference is made to two recently reported cases, also in women of an African race.

An incidence of between one and five in a million pregnancies is computed, by reference to previously published reviews.

The diagnosis and treatment, particularly the safety of leaving the extra-uterine placenta *in situ*, is discussed. This is borne out by the recovery of the author's case, even after infection and a most stormy convalescence.

I would like to express my indebtedness to Dr. J. P. Theron for his unremitting care of and interest in this patient, without which the outcome would certainly have been very different.

REFERENCES

1. Gilliland, J. (1949): S. Afr. Med. J., **23,** 558.
2. Fejer and Henry (1949): J. Obstet. Gynaec. Brit. Emp., **56,** 240.
3. Novak (1926): Surg. Gynec. Obstet., **43,** 26.
4. Ludwig. D. B. (1940): Amer. J. Obst. Gynec., **39,** 341.
5. Mirta, S. (1940): J. Obst. Gynaec. Brit. Emp., **47,** 206.
6. DeVoe, R. W. and Pratt, J. H. (1948): Amer. J. Obstet. Gynec, **56,** 1119.
7. Mason, L. W. (1940): Amer. J. Obstet Gynec., **39,** No. 5.

ABSTRACTS

Is Bejel Syphilis? Akrawi, F. (1949): Brit. J. Vener. Dis., **25,** 115.

Bejel is considered by Hudson and others to be a form of spirochaetosis affecting certain nomadic Arab tribes. Unlike syphilis, there is an absence of primary sores, mucous patches predominate and the method of infection is entirely non-venereal.

The author, who is the Director of the Department for Venereal Diseases at the Royal College of Medicine in Bagdad, believes in the identity of bejel and syphilis. He found it impossible to inoculate bejel into eight cases of general paralysis of the insane. He succeeded in inoculating eight out of 10 volunteers who had no history or signs of syphilis, using mucous patches of Bedouin children with bejel. Erosive sores, in which *Spirochaetae pallidae* were found, were produced in 17 to 22 days. Sub-mental adenitis followed. The Wassermann reactions became strongly positive in 20 to 25 days after the appearance of the sores.

He succeeded in causing two out of five volunteers to develop positive Wassermann reactions without primary sores, by drinking from vessels after a Bedouin child, with mucous patches, had drunk from them. Flies, allowed to feed for a few minutes on similar scarified mucous patches, were allowed to settle immediately on the lips of two volunteers. One remained clinically and serologically negative when observed for two years. The other, without developing any signs or symptoms of syphilis, developed a strongly positive Wassermann 77 days after the inoculation.

From this he argues that bejel is a non-venereal form of syphilis, and that the method of stamping it out is by improving hygienic conditions and by taking every step to treat mucous patches which are responsible for the spread of the disease.

[The reviewer is of the belief that this non-venereal form of syphilis is current in this country among our natives, amongst whom living conditions not dissimilar to the nomadic Arabs, exist. It is probable that syphilis in the Bantu in South Africa is a mixture of the non-venereal and the venereal forms in equal proportions.

Interstitial keratitis, with no signs of congenital syphilis, is found in cases above the age of 20 years. The suggestion is put forward that these cases, occuring in the third decade, are caused by non-venereal infection in the first few years of life, in contrast to those having the usual congenital origin which produce interstitial keratitis in the second decade.]

Penicillin in the Treatment of Early Syphilis. 639 Patients Treated with 2,400,000 Units of Sodium Penicillin in 7½ Days. Bundesen, H. N, *et al.* (1949): J. Vener. Dis. Inform., **30,** 321.

The overall failure rate, regardless of the stage of the disease, was 32.2%, at the two-year observation period. This method is therefore considered inadequate.

For the various stages of the disease, the percentage of successful results was as follows:

1. Twelve to 15 months' observation: primary sero-negative, 84; primary sero-positive, 79; secondary, 73; relapses, 64.

2. Twenty-four to 27 months' observation: primary sero-negative, 76; primary sero-positive, 73; secondary, 62; relapses, 66.

The earlier the cases were treated, the better were the final results; the longer the observation period, the more failures were noted.

The Neuro-cutaneous Melanoses (*Les Melanoses Neuro-cutanees*). Touraine, A. (1949): Annal. Dermatol. Syphiligraph., **9,** 489.

A careful, complete, detailed and fully documented study. The author concludes that one should consider melanogenesis and the ensuing pigmentation as a normal process, of ecto-dermal origin, common to the skin, certain mucous membranes and the meninges. This process may be altered, in various degrees of ortho- or hyperplasia, through the following successive stages whose synergy and parallelism in the skin and nervous system seem well established.

1. Physiological state: Normal skin pigmentation, deeper in certain areas; pigmented cells normally present in meninges.

2. Melanism: Excess of pigmented cells; hyperpigmented skin in areas normally most pigmented; diffuse pigmentation of pia mater.

3. Melanosis: Patchy accumulations of pigmented cells without tissue hyperplasia (often with melanism); flat pigmented naevi; melanic patches on meninges.

4. Melanomas: Nodules or tumours of pigmented cells with tissue hyperplasia (often with types (2) and (3)).

(*a*) Benign: Pigmented tumours of skin; small melanic nodules on meninges, non-infiltrating and non-destructive.

(*b*) Malignant: Naevo-cancers of skin; melanic tumours of neuraxis, infiltrating and destructive; all susceptible of metastasis.

Hereditary Ectodermal Dysplasia (Dysplasie Ectodermique Héréditaire (Anidrose, Hypotrichose et Anodontie) et Alterations Endocriniennes). Tanissa, A. (Lisbon) (1949): Ann. Derm. Syph., **2,** 171.

The classical triad in this condition is anidrosis, hypotrichosis and anodontia. To this the author adds cranio-facial dysplasia. The nose is always deformed, sometimes saddle-shaped, sometimes negroid, and obliquity of the eyes gives a mongolian appearance. This description is the same as that for the 'oezena facies', and indeed, atrophic rhinitis is usually associated. Dyschromias may also be found, e.g., hyperpigmented plaques, leukoderma, vitiligoid patches. Evidence of hypofunction of the adrenal and pituitary glands can also be demonstrated.

South African Medical Journal
Suid-Afrikaanse Tydskrif vir Geneeskunde

EDITORIAL

SYNTHETIC DYESTUFFS FOR USE IN FOODS

The Standards Council has recently published a *List of Synthetic Dyestuffs for Use in Foods.** These dyes or blends thereof may be used for colouring food products prepared in conformity with the relevant Standards Council specification provided that:—

The dyes are specially prepared for use in food;
The dyes are of the highest purity standard;
The colouring of the food product is permitted in the particular specification.

This list was prepared by a committee on which were represented manufacturers of foodstuffs, fruit drinks and the synthetic dyestuffs and which was specially appointed for this purpose by the Standards Council. It was felt most necessary that the widespread and indiscriminate use of synthetic coal tar colours should be combated, more especially as dyestuffs of a state of purity not suitable for incorporation in a foodstuff were sometimes used. It is considered that it is particularly important that such dyestuffs should not be used in foodstuffs prepared in accordance with quality specifications.

Research and experience have shown that certain dyestuffs are of a toxic nature due to the chemical structure of the dye or its intermediary impurities. It has even been proved that many dyestuffs have carcinogenic properties and it is understandable, therefore, that reputable dyestuff manufacturers no longer recommend the use of certain dyes known to be capable of producing cancer.

The list of dyestuffs published by the Standards Council contains only dyes known to be harmless, but it is sufficiently comprehensive to cover all the needs of foodstuff manufacturers desiring to use colouring matter in their products.

While it is recommended that all food manufacturers should use only dyes known to be safe, only those manufacturers producing foodstuffs in conformity with a specification of the Standards Council are obliged to restrict themselves to the dyestuffs contained in the

* Copies of the list priced at 1s. 6d. each post free are obtainable from the South African Bureau of Standards, Private Bag 191, Pretoria.

VAN DIE REDAKSIE

SINTETIESE KLEURSTOWWE VIR GEBRUIK IN VOEDINGSMIDDELS

Die Raad vir Standaarde het onlangs 'n lys* van sintetiese kleurstowwe vir gebruik in voedingsmiddels uitgegee. Hierdie kleurstowwe of mengsels daarvan mag gebruik word vir die kleur van voedingsprodukte wat ooreenkomstig die betrokke spesifikasie van die Raad vir Standaarde vervaardig is, mits:—

die kleurstowwe spesiaal vir gebruik in voedsel berei is;
die kleurstowwe aan die hoogste suiwerheidstandaard voldoen;
die kleuring van die voedselproduk in die betrokke spesifikasie veroorloof word.

Hierdie lys is opgestel deur 'n spesiaal deur die Raad vir die doel aangestelde komitee waarop vervaardigers van lewensmiddele, vrugtedranke en sintetiese kleurstowwe verteenwoordig was, aangesien besef is dat dit absoluut noodsaaklik is om die uitgebreide en onoordeelkundige gebruik van sintetiese koolteerprodukte te bestry, veral omdat kleurstowwe van 'n suiwerheidsgraad wat hul gebruik in voedingstowwe ongewens maak, partykeer daarin verwerk is. Daar word gereken dat dit besonder belangrik is dat sulke kleurstowwe nie gebruik word in voedingstowwe wat ooreenkomstig kwaliteitspesifikasies berei is nie.

Navorsing en ondervinding het aan die lig gebring dat sekere kleurstowwe giftig is, weens hul chemiese samestelling of hul intermediêre onsuiwerhede. Daar is selfs bewys dat baie kleurstowwe kankerverwekkende eienskappe besit en mens kan dus goed verstaan dat fatsoenlike kleurstofvervaardigers nie meer die gebruik van sekere kleurstowwe waarvan bekend is dat hulle kanker kan verwek, sal aanbeveel nie.

Op die lys deur die Raad vir Standaarde uitgegee kom slegs onskadelike kleurstowwe voor, maar dit is uitgebreid genoeg om in al die behoeftes van voedselfabrikante wat kleursel in hul produkte wil gebruik, te voorsien.

Hoewel alle voedselfabrikante aangeraai word om slegs onskadelike kleurstowwe te gebruik, is slegs diegenes wat lewensmiddele volgens een van die Raad vir Standaarde se spesifikasies vervaardig, verplig om hul te beperk tot die kleurstowwe wat op die Raad se lys voorkom. Verbruikers wat artikels koop met die Raad se standaardmerk daarop as waarborg dat hulle

*Eksemplare van die lys is teen 1s. 6d. per stuk, posvry, verkrygbaar by die Suid-Afrikaanse Buro vir Standaarde, Privaatsak 191, Pretoria.

Council's list. Consumers purchasing foodstuffs bearing the Council's standardization mark as guarantee that they are manufactured to a quality specification can therefore be assured that the products contain no harmful substances. In issuing this list the Standards Council is therefore providing a valuable measure of consumer protection and at the same time is assisting manufacturers in the selection of suitable dyestuffs.

The list of dyes will be reviewed from time to time and such amendments as are deemed desirable will be made. Application for the admission of new dyestuffs to the lists must be accompanied by a full description of the method of manufacture, statement of composition, intermediaries, impurities, methods of identification and analysis, and must be supported by evidence of harmlessness and suitability.

ooreenkomstig 'n kwaliteitspesifikasie vervaardig is, kan dus staat daarop maak dat die produk geen skadelike bestanddele bevat nie. Deur die uitgee van hierdie lys, verskaf die Raad vir Standaarde dus 'n waardevolle middel vir die beskerming van verbruikers en tegelykertyd help hy fabrikante by hul keuse van geskikte kleurstowwe.

Die kleurstowwelys word van tyd tot tyd hersien en enige wysigings wat nodig geag word, sal daarop aangebring word. Aansoeke om opname van nuwe kleurstowwe op die lys moet vergesel gaan van 'n volledige beskrywing van die produksiemetode, 'n verklaring omtrent die samestelling, intermediêre stowwe, onsuiwerhede, en herkennings- en ontledingsmetodes, en moet gestaaf wees deur bewyse van onskadelikheid en geskiktheid.

HIRSCHSPRUNG'S DISEASE AND IDIOPATHIC MEGACOLON

DENIS H. THOMPSON, O.B.E., F.R.C.S.

and

JOSSE KAYE, M.P.S., M.R.C.S., L.R.C.P., D.M.R.

General Hospital, Johannesburg

Recently there has been a change in the outlook on this disease, largely as a result of the work of Swenson and Bill[1] and Bodian, Stephens and Ward.[4]

It is now possible to differentiate true Hirschsprung's disease from idiopathic megacolon. Stephens[2, 4] has reviewed 73 cases previously classified as idiopathic megacolon in the records of Great Ormond Street and has come to the conclusion that 39 of these are true Hirschsprung's disease, while the remainder come under the category of idiopathic megacolon.

He classifies his cases in the following way:

GROUP 1: HIRSCHSPRUNG'S DISEASE

The history begins at birth with constipation and delay of the first meconium stool for some days. Gaseous abdominal distension soon appears. The onset of this may be gradual or it may be sudden and be accompanied by the signs of an acute intestinal obstruction. Those cases which survive soon develop a chronic abdominal distension and go through life with attacks of acute on chronic obstruction.

On examination, bowel sounds are usually exaggerated and large quantities of foul flatus are passed. Stools are characteristically small and rabbity when hard, or like thin tooth paste ribbons when soft. Defaecation is painless and is accompanied by much ineffectual straining. There is no faecal incontinence.

The abdomen is grossly enlarged with visible peristalsis, the ribs may become flared and the diaphragm raised.

Rectal examination reveals a clean anus, a normal sphincter, a well-formed anal canal, a small, empty or nearly empty rectum and perhaps spasm in the region of the upper rectum. The loaded sigmoid colon may be palpable through the rectal wall.

Diagnosis. In chronic cases the straight X-ray showed gaseous distension with the ribs splayed and the distended colon immediately below the diaphragm on both sides.

A barium emulsion with paraffin and glycerin was used to avoid the consequences of desiccated barium in the colon. The flow into the rectum was under the immediate control of the radiologist so that it could be stopped at will and the initial filling of rectum and recto-sigmoid could be closely observed.

The rectum appears to be of normal or less than normal size. Above the rectum the diameter of the gut narrows for a distance which varies from case to case (1-12 inches). Above this it opens by a wide funnel into a hugely dilated and gas-filled colon. When the narrow segment was long enough to be seen well, the bowel wall had a rippled appearance. In three cases described by Bodian, Stephen and Ward,[4] segmentation of the colon by barium was noted. Low spinal anaesthesia was induced in these cases and the enemata repeated. The outline of the narrow segment was then shown to be smooth, inactive and slightly wider, but there was no spontaneous evacuation.

In another three cases described by the same workers, patients were examined after excision of the dilated part of the colon. The undilated part had been anastomosed to the distal sigmoid segment. All these cases still showed a narrowed distal segment, but the proximal

normal gut which had been anastomosed was now found to be grossly dilated.

Pathology. Two previous conceptions of the aetiology have now been discarded, viz.:

1. *Malformation,* postulating giant growth of the colon.

2. *Obstruction,* which assumes redundancy and kinking of part of the colon.

The theory of neurogenic upset has been largely based on a functional autonomic imbalance.

Neurohistological investigations have produced contradictory results. Early workers could find no abnormality in the autonomic innervation of the bowel but they only examined the dilated bowel.

Bodian[4, 7] examined the narrow segment in 20 specimens. His findings in both intramural plexuses (Myenteric or Auerbach's and submucous or Meissner's) were uniform in all 20 specimens. There was a complete absence of parasympathetic ganglion cells throughout the entire narrow segments, the absence extending 5-18 cm. above the narrow bowel into the dilated part. No inflammatory changes of significance were noted in the plexuses and the picture suggested a congenital lesion.

Proximal to the pathological segments ganglion cells were normal (Fig. 1).

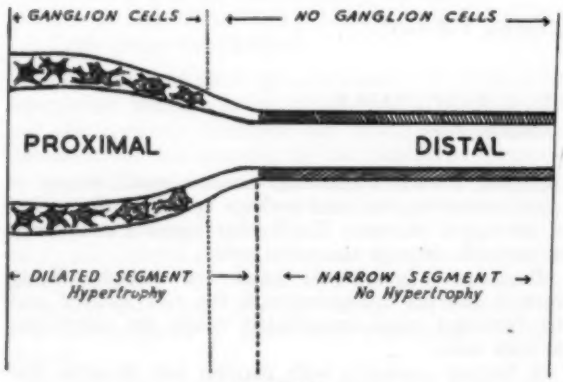


FIG. 1

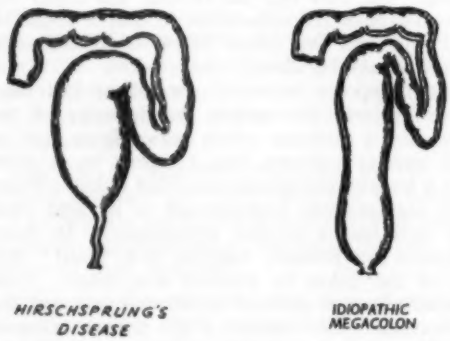


FIG. 2

Fig. 1. Pathology of Hirschsprung's disease.
Fig. 2. Hirschsprung's disease showing narrowed distal segment with normal rectum.
Idiopathic megacolon showing grossly dilated rectum.

Treatment. Many forms of treatment have been adopted in recent years, varying from general medical treatment, binders and purgatives, to spinal anaesthetics, sympathectomy, excision of the dilated loop, hemicolectomy and even total colectomy. All of the foregoing have been published as effective means of treatment. Colostomy has also been used, usually in emergency, with good results, but there has always been the difficulty of closure as this frequently breaks down. This is probably due to the effect of the narrowed distal segment causing back pressure.

Swenson and Bill[1] suggested, on purely clinical grounds, that the narrowed segment might be the cause of the pathology. They tried experimental recto-sigmoidectomy on 15 dogs with preservation of the sphincter. As these operations were successful, three children were subjected to the operation of excision of the segment with preservation of the sphincter. All were successful.

Stephens[3] has performed the operation on 12 cases; 11 of them were completed while the other case awaited the closure of the colostomy. The mortality was nil and the early results were most encouraging. He has modified the ' pull through ' technique of Swenson and Bill[1] and does the operation in these four stages:

Stage 1. After a preliminary course of bowel washouts, the distal colon is defunctioned by a right-sided, transverse, spur colostomy.

Stage 2. Several months later, after the general condition of the child has improved, an abdomino-perineal recto-sigmoidectomy is done as follows:

(a) Delineation of the abnormal segment. The proximal end of the thin-walled, narrow segment can be determined at its junction with the cone shaped, hypertrophied and dilated bowel. If the junction is situated at a low level in the true pelvis, it is sometimes difficult to find at operation.

(b) The site of election for proximal resection of the bowel is halfway along the cone-shaped funnel, since it has been found that the ganglion cells usually disappear here.

(c) The rectum is dissected free from its supporting fascia propria, distally as far as the levator ani muscle. This aims at reducing interference with bladder innervation.

(d) The narrow segment is totally intussuscepted out of the pelvis through the anus. The following method of performing this is described by Browne[6].

After the narrowed portion has been freed and the blood supply divided, a sigmoidoscope is passed through the anus into the freed bowel to be resected. Two needles, 18 inches in length are passed through the bowel into the sigmoidoscope at a point carefully selected as the centre of the portion to be resected. They carry long loops of braided silk. The sigmoidoscope is then removed. Traction on the silk loops produces an intussusception which becomes a prolapse of the recto-sigmoid outside the anus.

The sigmoidoscope is re-introduced and sutures are inserted to lock the two layers of the prolapsed bowel. Highly curved needles are used and the sutures are placed about $\frac{1}{4}$ inch from the ano-cutaneous margin. The sigmoidoscope serves to indicate when the needle has pierced the lumen of the bowel. The prolapsed part of the bowel is now excised by diathermy and the cut ends of mucosa are sutured together.

Stages 3 and 4 consist of crushing of the spur and closure of the colostomy.

GROUP 2: IDIOPATHIC MEGACOLON

These cases present a clinical pattern differing in many respects from Hirschsprung's disease.

Constipation is often present in a mild form from birth but it is usually overcome by mild aperients. There is no evidence of delay in the passage of meconium. Several months or years later a more severe type of constipation develops.

Abdominal distension arises less frequently and usually later than in Group 1 and faecal masses as opposed to gaseous accumulations are more apparent. Vomiting is infrequent. Intestinal colic is common and often precipitated by purgatives which are so frequently administered. Borborygmi and flatus are less apparent in this group. The rectum contains faeces of large diameter, often hard and streaked with blood and the anus is sometimes held open by these. Defaecation is accompanied by much straining and sometimes pain.

This sequence of events leads the child to hold back motions and accumulated faecal masses distend the rectum. Soft and newly-formed faeces are massaged past this faecal plug causing a paradoxical diarrhoea or an overflow incontinence.

Children in this group are relatively fit as compared with the high mortality in Hirschsprung's disease and the condition seems to run a benign course, responding to medical measures with relapses from time to time. Considerable numbers have been cured by regular bowel washouts over several months and years.

Many cases have had some operation on the sympathetic system and the results have been interpreted as successful, but it is suggested that the thorough preoperative bowel washouts may have had something to do with the improvement.

Some children present with the sequelae of straining such as piles and prolapse and have developed a 'fear of the pot'. They are also shameful of soiling clothes. Frequently they prefer to stand when defaecating. These symptoms all clear up with physical treatment of the constipation and do not appear to be psychogenic in origin, as has been suggested.

In the series of 34 cases in this group reported by Bodian, Stephens and Ward,[4] no cases have died, showing the benign nature of the disease.

Diagnosis. Radiologically this group showed that the distension started in the rectum itself and that the rectum and distal pelvic colon form a pear-shaped unilocular, dilated chamber stretching to the xiphisternum. Unless there has been special preparation this chamber contains large faecal masses. Proximal to this the colon returns to almost normal diameter.

No pathology has been found to account for this group of cases

Treatment. The management of these cases embodies three principles:—

1. Thorough and repeated *evacuation of the bowels.* If the rectum is firmly impacted with hard faeces, these must be removed under general anaesthesia if necessary. If faeces are soft, they may be removed by bowel lavage.

Colonic lavage is required daily until all faecal masses have been removed and subsequently three times weekly for three weeks, and twice weekly for two weeks. It is important to continue the treatment, even if bowel action becomes normal. Thereafter bowel washouts are given for a varying period according to the response.

2. *Purgation.* After removal of the main bulk of the faeces, regular treatment with purgatives is initiated.

3. *Education* in normal bowel habits.

SUMMARY

The recent advances in the treatment of Hirschsprung's disease are discussed.

The differential diagnosis between Hirschsprung's disease and idiopathic megacolon may be summarized as follows:—

	Hirschsprung's Disease	*Idiopathic Megacolon*
Passage of meconium	Delay	No delay
Gaseous distension	Early	Late
Acute intestinal obstruction	Early	Late (rare)
Borborygmi	Increased	Usually not increased
Flatus	Foul and copious	Rare
Rectal examination	Empty Loaded recto-sigmoid felt through wall of rectum.	Loaded with hard faeces
Incontinence	Absent	May be present
Course of the disease	High mortality	Benign

REPORT OF A CASE OF IDIOPATHIC MEGACOLON

The patient, a male, was born on 15 September 1929, with an imperforate anus. On 20 September 1929 he was admitted to the Transvaal Memorial Hospital for Children where he had an operation for the removal of the anal membrane. The exact details of this operation are not available. The patient was discharged cured a few days later.

In November 1943 at the age of 14 years the patient was admitted to the Johannesburg General Hospital with a history of incontinence and 'no control of the bowels since birth'. He had also needed several 'stretchings' of his rectum each year. At this time he underwent Wreden's operation[5] by which fascial strips are looped round the rectum and attached to the gluteus maximus muscles by incisions lateral to the rectum.

He was given four bowel washouts before the operation. After the operation he took liquid paraffin daily for about three months and his bowels were controlled. After this he became negligent about taking liquid paraffin and his bowels again became stubborn. He would go for a month without a bowel action. He would then take two 'Carter's Little Liver Pills', become incontinent and have his bowels open. He found that after about a month he became very uncomfortable and was forced to take these pills to obtain relief. As a child he remembered that he had severe 'stomach pains' but recently these have not bothered him.

In February 1949, at the age of 19 years, the patient was admitted under one of us (D.H.T.) with a history of abdominal pain and constipation for two weeks.

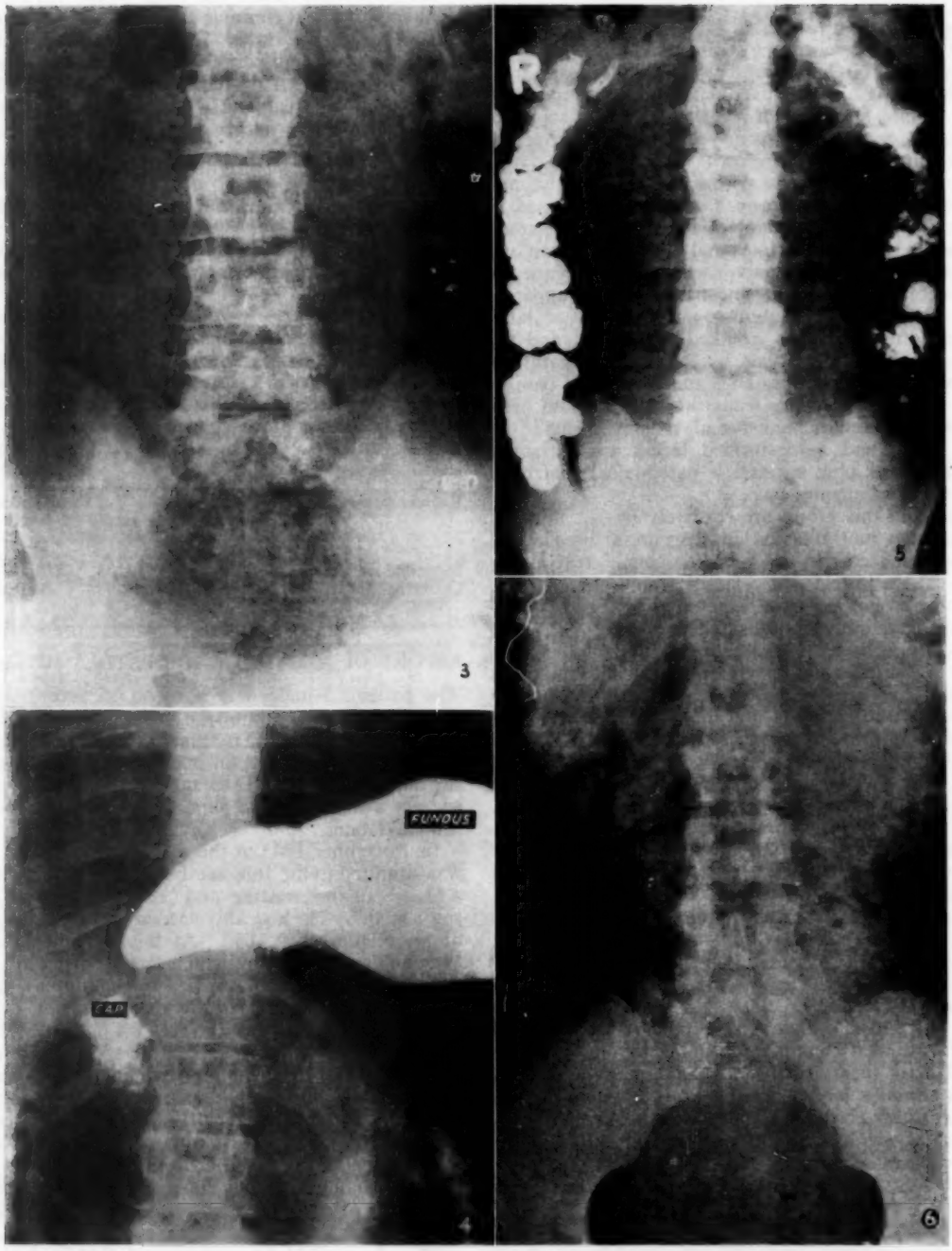
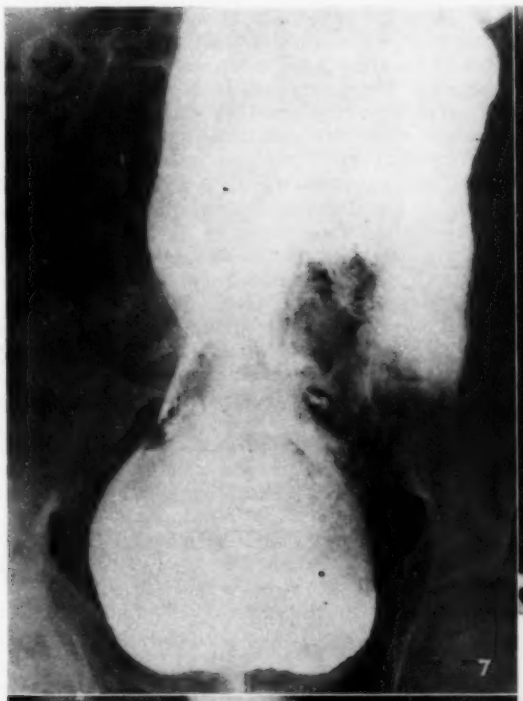
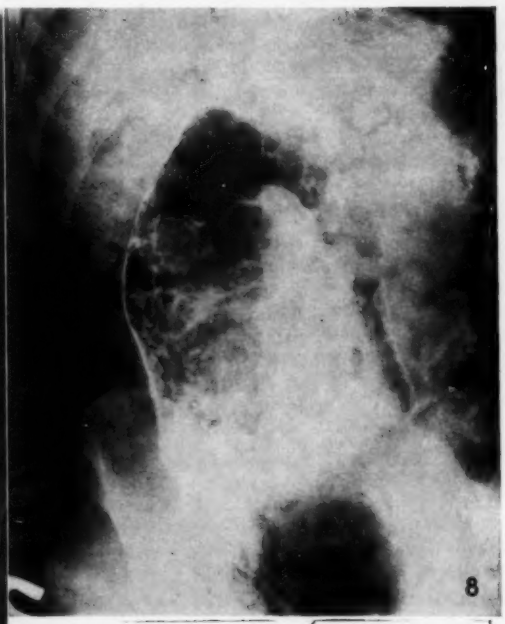
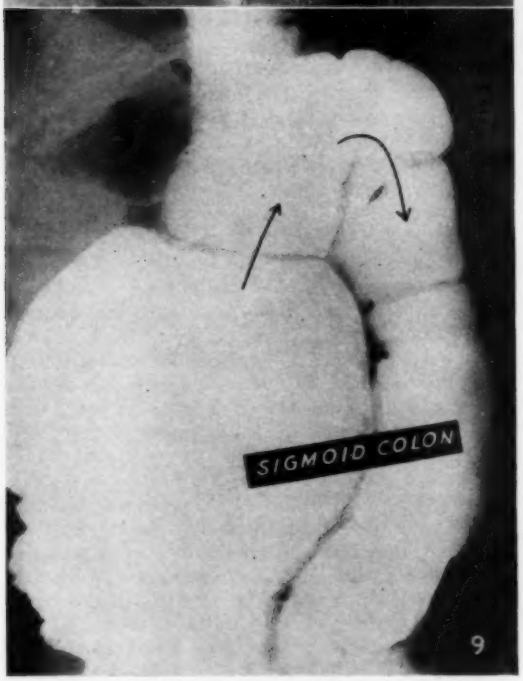


Fig. 3. Extensive mottling over almost the whole of the abdomen, extending into the pelvis. Outline of rectum not seen.
Fig. 4. Showing the upward displacement of the stomach by the stippled mass arising from the pelvis.
Fig. 5. The colon is shown displaced by the abdominal mass.
Fig. 6. Straight X-ray showing the abdominal mottling. Note how the stippling appears to be well defined in the pelvis, suggesting its rectal origin.







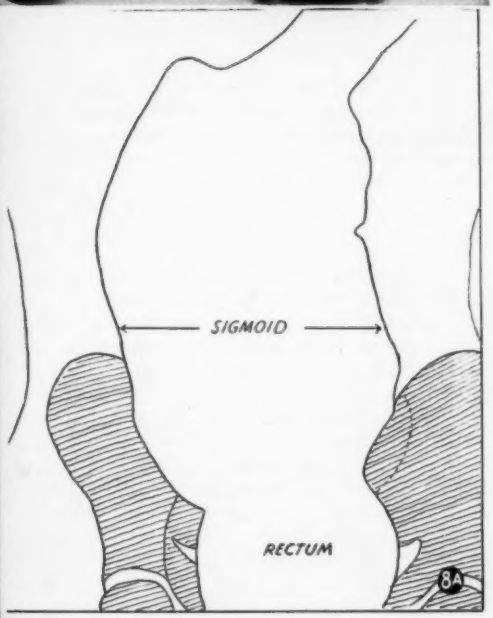


Fig. 7. First Barium enema. Note the widely dilated rectum.

Figs. 8 *and* 8*a*. First barium enema, after evacuation and air-insufflation.

Fig. 9. Second barium enema. (See legend to Figs. 10—12a).

On inspection, the abdomen was found to be distended. Visible peristalsis was present.

Palpation revealed no masses but the whole abdomen felt doughy. There was no tenderness.

Percussion elicited generalized dullness which did not shift.

Rectal Examination. It was found that the rectum was loaded with masses of hard faeces.

RADIOLOGICAL ASPECTS

The patient was referred to the X-ray Department on 10 February 1949 with chronic intestinal obstruction.

The straight radiograph (Fig. 3) revealed no evidence of fluid levels but a fairly dense mottling was present over almost the whole of the abdomen. At first it was thought that this mottling was due to a markedly dilated stomach containing food debris, and consequently a stomach washout was suggested before a repeat examination.

This was done and the patient was re-X-rayed on 12 February 1949. The extensive stippling extending into the pelvis was again demonstrated. The outline of the rectum could not be seen with any degree of certainty. At this examination, the gas-filled ascending colon, transverse colon and descending colon were seen. The following possibilities were suggested:—

i. Localized megacolon;
ii. A large dermoid;
iii. Small bowel pathology.

A barium enema and barium meal were suggested.

Several enemata had no effect upon the faeces and a manual removal was necessary. The width and size of the rectum was not appreciated by this manoeuvre.

The patient then improved and discharged himself from hospital. He was asked to report back as an outpatient, but when he did so in March 1949, he refused to submit to a barium enema examination. Consequently it was decided to do a barium meal and to follow this with large doses of liquid paraffin.

The meal revealed the stomach lying high up under the left dome of the diaphragm, being displaced upwards by a large mass arising from the pelvis (Fig. 4). No pathology was detected in the stomach and duodenum. The radiograph taken 1½ hours after the ingestion of barium showed the small bowel lying to the left and anterior to the large abdominal mass. Twenty-four hours later the patient was again X-rayed and this revealed the barium lying in the ascending colon, transverse colon and descending colon. The colon appeared to be displaced by the abdominal mass (Fig. 5). The appearance suggested that the large stippled mass was either faecal material in the sigmoid colon or a large intra-abdominal dermoid.

The fact that the barium had not reached the rectum was explained by pathological dilatation of the sigmoid colon or as the result of pressure upon the lower bowel by a large intra-abdominal dermoid.

The patient failed to return for radiographs at 24-hour intervals.

At this stage, it should be mentioned that a large intra-abdominal dermoid was considered the more likely diagnosis. Megacolon appeared unlikely as survival to adult life with such gross dilatation appeared improbable, apart from the fact that the ascending colon, transverse colon and descending colon appeared normal, both on the straight radiograph which showed these structures well outlined by gas, and on the 24-hour barium follow-through examination after the barium meal.

In August 1949, the patient was re-admitted, complaining of some abdominal discomfort and general malaise. He was referred to the X-ray Department on 22 August 1949, when a straight radiograph was taken (Fig. 6). This again revealed the large stippled mass occupying almost the entire abdominal cavity. In the pelvis, however, the stippling appeared to be well defined, a feature not previously seen; and it was now suggested that the peculiar mottling was due to localized dilatation of the large bowel, i.e. the rectum and the sigmoid colon. A barium enema examination was advised, after a vigorous routine of bowel washouts.

It was previously decided that no attempt would be made to fill the whole colon. Four to five pints of barium suspension were introduced. The examination was stopped when the barium reached the upper abdomen. This revealed a widely dilated rectum and a markedly dilated sigmoid (Fig. 7). After evacuation and bowel washouts an air insufflation was done, again showing enormously dilated sigmoid and rectum (Fig. 8 and its tracing).

A sigmoidoscopy was then decided upon and this revealed a very large rectum, which was now clear. There was no evidence of stercoral ulceration. The sigmoidoscope was passed to the hilt with ease.

It was now appreciated that there was some stricture and spasm of the anal sphincter but a finger could be introduced fairly easily.

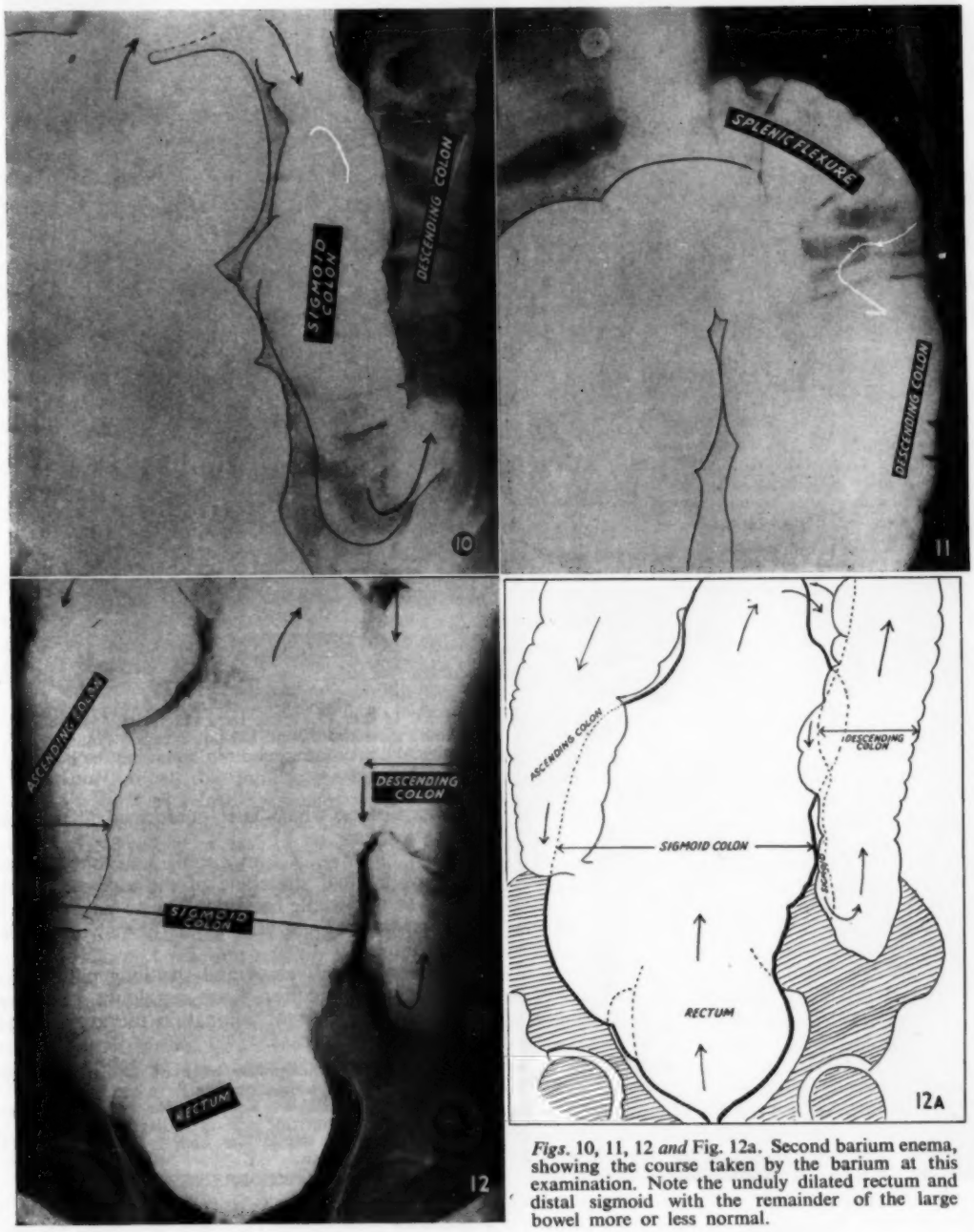
It could not be decided definitely whether the spasm was due to the initial operation for imperforate anus or to the second operation in which fascial slings were used.

After discussion with the surgeon, it was decided that a repeat barium enema examination should be done and an attempt be made to fill the colon until normal bowel was reached

A barium suspension containing two ounces of liquid paraffin to each pint was used in order to avoid the consequence of desiccated barium in the colon. The course of the barium is illustrated on the radiographs (Figs. 9-12). It might be of interest to add that between 12 and 14 pints of barium suspension were used.

It will be seen from the radiographs that the rectum is unduly dilated and that the distal portion of the sigmoid is enormously dilated (Fig. 12 and its tracing). This dilated sigmoid was completely devoid of haustral markings and formed an inverted U with a bend in the upper abdomen. The sigmoid proximal to this bend and the remainder of the large bowel appeared slightly dilated with the haustral ridges well shown.

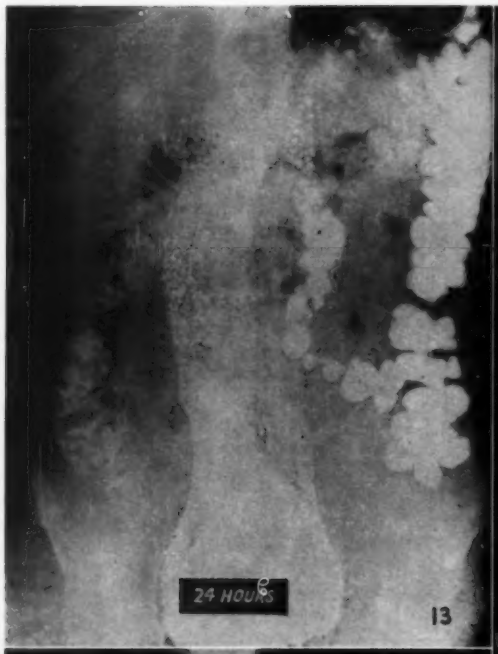
After the enema, bowel washouts were commenced immediately and radiographs were taken at 24, 48 and 72 hours (Figs. 13, 14 and 15).

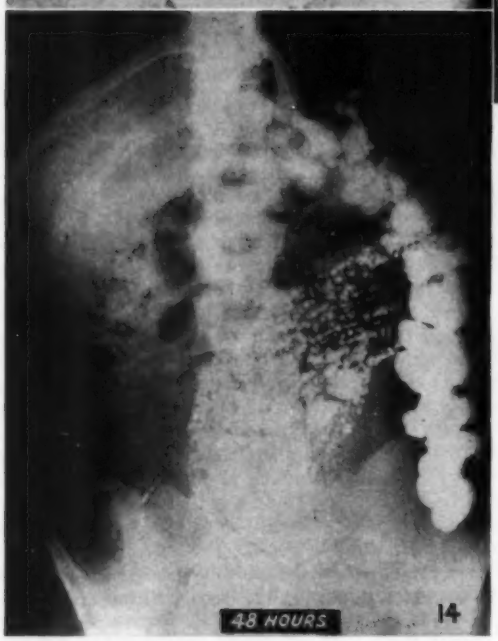


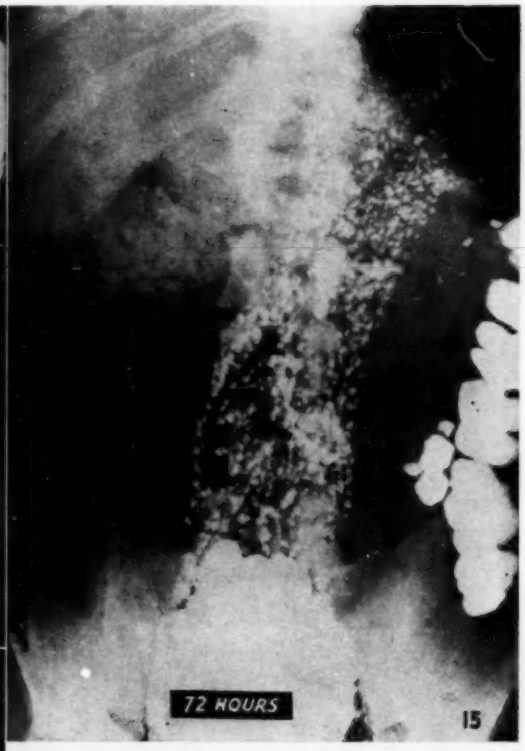
Figs. 10, 11, 12 *and* Fig. 12a. Second barium enema, showing the course taken by the barium at this examination. Note the unduly dilated rectum and distal sigmoid with the remainder of the large bowel more or less normal.

In view of the dilated rectum and the dilated sigmoid which together formed a unilocular dilated chamber, the case was considered to be one of idiopathic megacolon.

Treatment. Conservative treatment with regular enemata and liquid paraffin has been advised because with washouts there has been such a great improvement in the size of the bowel, as shown on the X-ray.







Figs. 13, 14 *and* 15. These were taken at 24, 48 and 72 hours after the second barium enema. Note how the sigmoid has contracted down, following the bowel wash-outs.

SUMMARY

A case of idiopathic megacolon has been described. There were several points in the history which caused difficulty of diagnosis.

1. The presence of an anal membrane at birth. (Bodian, Stephens and Ward[4] described four cases of anal membrane which later conformed to true Hirschsprung's disease.)

2. The history of 'no control' of bowels and yet requiring manual stretching of the anal sphincter.

3. Was this whole condition due to an organic lesion of the sphincter? In view of the history as a child, we do not think so.

The radiological signs and the long clinical history of chronic constipation leave no doubt in our minds that this is a case of idiopathic megacolon and not Hirschsprung's disease.

We wish to acknowledge the work of Bodian, Stephens and Ward from whose publications we have freely drawn.

We thank Dr. Phyllis Knocker for her help in reading the proofs and preparing the two diagrams.

We also wish to thank *The Lancet* for permission to use the modified diagrams.

REFERENCES

1. Swenson, O. and Bill, A. H., Jr. (1948): Surgery, **24**, 212.
2. Stephens, F. D. (1948): Proc. Roy. Soc. Med., **41**, 831.
3. Stephens, F. D. (1949): Proc. Roy. Soc. Med., **42**, 223.
4. Bodian, M., Stephens, F. Douglas and Ward, B. C. M. (1949): Lancet, **1**, 6.
5. Smithy H. G., Kredel, F. E. and Charleston, S. C. (1947): Surgery, **22**, 259.
6. Browne, Denis (1949): Proc. Roy. Soc. Med., **42**, 227.
7. Bodian, M. (1949): Proc. Roy. Soc. Med., **42**, 225.
8. Wreden, R. R. (1929): Arch. Surg., **18**, 841.

X-RAY TREATMENT OF SOME NON-MALIGNANT DISEASES*

R. J. W. CHARLTON, D.S.O., E.D., M.B., CH.B., F.F.R., D.R., (EDIN.)
Johannesburg

In presenting a number of conditions which have been treated successfully with X-radiation it is not intended to indicate either that the list is complete or that all the patients suffering from these conditions can be cured. In many this claim can be made. In others the results are less certain but sufficiently promising to warrant further attempts with different techniques. The dosage, X-ray factors and intervals between treatment given are those to which we have gradually felt our way over the last 20 years, and which no doubt will continue to be improved by trial and error.

No guidance can be laid down beyond generalisations for dosage in non-malignant disease. It is not intended to discuss the techniques of treatment of malignant disease on which subject quite a sufficient variety of opinion already exists.

The mode of action of X-rays on tissues is a question which is often put to the Radiologist by the enquiring practitioner and it is one which cannot be answered as yet. There are, however, interesting theories on this subject.

It has been proved at least that the X-ray has momentum and so must have mass and velocity. A stream of X-rays has therefore been compared with a stream of bullets from a machine-gun. These ray bullets, however, are so small in comparison with the tissues at which they are aimed that many pass through the tissues without hitting any portion of the molecules they traverse. Others strike a body of relatively greater mass and are either absorbed, deviated or converted into a number of rays of longer wavelengths exactly as a bullet might fragment. These fragments or scattered rays in their turn may traverse the tissues or be absorbed, or even scatter further.

As is known, not only the appearance of matter but its chemical state and reaction can be altered even by the dislodgment of a single electron from its orbit in the atom or molecule. Radium for instance, by a steady loss of electrons and protons changes its physical state ultimately through various stages to lead.

These points lead to two of the theories of action of radiation. The first is that the ray bullets can cause direct damage to the cells and so, by diminishing their vitality, make them more amenable to the normal healing processes of the body.

The second is that either the chemical reaction or the *p*H state of the affected cell—or body—fluid are changed and permit an easier removal or combination with antibodies.

There are good grounds for believing that both these factors are acting. The vigorous reaction produced on the skin by the large doses used in malignant disease (loosely and very erroneously referred to as a 'burn' by the uninitiated) would seem to indicate a direct traumatic action. On the other hand the effect of quite small doses on tissue such as the thymus or lymphoid tissue could hardly be explained in this way.

The question of scatter or fragmentation of the rays referred to above has one important practical bearing which must be referred to. This is that it is highly dangerous to irradiate skins on which metallic ointments or lotions have been used, especially the heavy metals such as mercury, lead, zinc and copper. Even iodine has its effects. With these heavy metals the amount of fragmentation of rays is very large and quite indeterminate from the operator's point of view. Quite severe reactions or 'burns' may be produced, by a dose which would otherwise have no visible effect on the skin, by the unknown number of soft rays generated by the scatter from X-rays striking the atoms of the metal lodged in the skin.

Three other bogeys must be laid.

The first is the fear of permanent injury to the eye and particularly the production of lens opacities. In our experience this is a risk which can be disregarded in all ordinary circumstances. Epitheliomata of the conjunctiva have been treated with heavy doses of radiation from both an X-ray and radium source with no immediate or late effect on the normal lens. A marked reaction of the conjunctiva similar to a severe conjunctivitis with photophobia is produced, but this recedes in the usual way that radiation reactions elsewhere disappear. I am much more concerned about the possibility of a production of a late endarteritis obliterans of the retinal vessels than of any lens injury after the large doses of radiation which must be applied for a neoplasm. So far no such complication has been met. We have, therefore, no fear in the treatment of such conditions as pterygium in which very small doses relative to the neoplastic dose referred to above are used. So far as the treatment of non-malignant lesions in or near the eye are concerned we do not consider there is any risk of permanent damage to the orbital structures.

The second bogey is the fear that irradiated areas will become so fibrosed as to make any subsequent surgical operation extremely difficult. This applies particularly to encapsulated structures such as the thyroid gland. There is no doubt that fibrotic scarring does occur in radiated areas, but only after considerable dosage and extended treatment. In the types of treatment discussed here this question of fibrosis can be disregarded, except that it must be remembered that fibrosis also results from inflammatory reactions whether irradiated or not.

The third point which may be mentioned as a bogey is the possibility of producing permanent baldness by irradiation. In a long experience of treating malignant tumours of the brain through portals on the scalp it is

*This paper was read at the Medical Congress held at Cape Town in September 1949.

amazing to find how difficult it is to produce permanent baldness on the normal scalp. Epilation of course occurs but the hair regenerates strongly and it is only after repeated courses of intense therapy that visible thinning of the hair is seen. When the hair roots have been the seat of long-standing infection, however, and vitiated by this to an unknown degree, permanent baldness may result from the added injury of radiation therapy. In our experience this has not yet occurred but fortunately ring worm of the scalp is a rarity in this country

One further point to make is that the Radiologist of to-day has apparatus available which can deliver precisely the dose required and this dose can be repeated at any time. This was not the case when X-radiation was first employed and this fact may have led to the varying results which were then obtained.

The conditions to be discussed have been sub-divided into groups for convenience. It is not claimed that each condition is in its proper pathological group.

1. CONDITIONS ARISING FROM PHYSIOLOGICAL ABERRATIONS

a. Ovarian and pituitary stimulation for oligomenorrhea and sterility.
b. Sterilization for menorrhagia.
c. Uterine fibromata *except* sub-mucous polypus.
d. Endometriosis.
e. Enlargement of thymus.
f. Thyrotoxicosis.
g. Chronic interstitial mastitis.

2. SKIN CONDITIONS

A. Non-Inflammatory:
a. Haemangiomata.
b. Plantar warts callosities and verruca vulgaris.
c. Pigmented moles.
d. Hyperkeratoses.
e. Leucoplakia.
f. Hyperidrosis—hands, feet and axillae.
g. Pruritis—anal and vulval.
h. Alopecia areata.
i. Psoriasis.
j. Lichen planus.
k. Keloids.
l. Pterygium.

B. Inflammatory:
a. Acne.
b. Boils and carbuncles.
c. Dermatophytoses.
d. Kala Azar.
e. Lupus vulgaris.
f. Herpes zoster.
g. Granuloma pyogenicum.

3. INFLAMMATION OR HYPERPLASIA OF LYMPHOID TISSUE

a. Enlarged chronic inflamed tonsils.
b. Hyperplasia of adenoidal tissues.
c. Chronic infection of lymph glands especially tuberculosis

4. CHRONIC ARTHRITIS

a. Hypertrophic osteoarthritis.
b. Spondylitis ankylopoietica of Marie Strumpel.

5. ABNORMAL CALCIFICATIONS

a. Pellegrini Stieda disease.
b. Calcification in supra-spinatus tendon.
c. Peroni's disease.

6. INFECTIONS

a. Parotitis.
b. Arachnoiditis.

All r units are as measured on the skin surface.
F.S.D. = Focal skin distance (given in cm.).
KV. = Kilovoltage.

1. CONDITIONS ARISING FROM PHYSIOLOGICAL ABERRATIONS

a. Ovarian and Pituitary Stimulation for Oligomenorrhoea and Sterility. This simple treatment has produced a gratifying number of successful cases. It consists of the application of 150r anteriorly to one ovary and 200r through one lateral 6×8 cm. portal to the pituitary on one day, and the same dose on the opposite ovary and opposite side of the head on the following day, the ovarian field being 10×15 cm.

The factors used are 200 KV. .5 CU. 1 AL. Filter. 50 cm. F.S.D.

There are no complications and no dangers.

b. Sterilization for Menorrhagia and Metrorrhagia. This treatment is applied as a rule to patients approaching the menopause but has been used in bad operative risks on younger patients and is uniformly successful. In the young patient, however, ovarian function will almost certainly return and pregnancy may occur before apparent menstruation after three to five years.

The fields used are two anterior 10×15 cm. and one posterior central 10×15 cm. field.

The factors are: 200 KV. 50 cm. F.S.D. .5 CU. 1 AL. Filter. Daily treatments of 300r to one field are administered until 900r are delivered to each field. In stout patients 1,200r to each field are given.

There are no complications or dangers except in the young patient as mentioned above.

Haemorrhage does not cease until the time of the second or third period after treatment. It is occasionally increased at the time of the first period.

The Radiologist must, of course, be assured that a neoplastic origin for the haemorrhage has been excluded.

c. Uterine Fibromata. The same treatment is given as for menorrhagia and metrorrhagia. This treatment is successful except in cases of submucous polypi which are unaffected and will continue to bleed.

d. Endometriosis. This treatment also is uniformly successful and is similar to the sterilization treatment for menorrhagia, except that two posterior pelvic fields are used and the treatment is taken in 300r daily doses to 1,500r on each field.

e. Enlarged Thymus. Treatment of the simple enlarged thymus is also uniformly successful and requires such small dosage that the radiographic and screen investigation of the patient is sometimes sufficient to diminish the tumour. A single 10 x 10 cm. field or an open field is used (because the baby may move) and 75r on three successive days at 180 KV. .25 CU. 1 AL. Filter. 50 cm. F.S.D. applied anteriorly.

If a sarcomatous degeneration of thymic tissue is suspected quite different treatment must, of course, be given.

f. Thyrotoxicosis. It is our opinion that surgical treatment is preferable in this condition since control by radiation is slow, taking about six months.

In a bad or hopeless operative risk, however, the following has been successful.

Treatments are given fortnightly and 200r given to each lobe of the thyroid for four to eight successive treatments.

The factors are: 180 KV. .25 CU. 1 AL. F.S.D. 50 cm. The basal metabolic rate is used as a rough control when the patient's weight is increasing and the pulse rate diminishing to near normal figures.

The younger the patient and the more acute the condition the better the response, which should be estimated about six months after beginning treatment.

Signs and symptoms are frequently increased by the first treatment.

g. Chronic Interstitial Mastitis. This condition responds uniformly well to radiation with relief of pain.

We have tried smaller and more frequent doses than those quoted below, but are not satisfied that the results are as good.

The dosage consists of 300r units to each breast in one day. If possible this is applied medially with a glancing field.

On the next day 300r units are again applied to each breast in the opposite glancing direction. Repeat this in one week.

Very occasionally this treatment is repeated for a minor recurrence of pain.

The factors are: 180 KV. .25 CU. 1 AL. 50 cm. F.S.D.

2*a*. SKIN CONDITIONS: NON-INFLAMMATORY

a. Haemangiomata. There is general opinion that these lesions should not be treated until the child is some years old. This is quite wrong and the sooner after birth radiation is applied the smaller the lesion and the quicker the response. There is also less scarring. This, especially to be stressed in facial haemangiomata and as these are seen more often in girls than boys in our experience, the point of early treatment becomes still more important.

We believe that the first treatment should be given in the first two months after birth and sooner if possible.

At this stage quite small doses repeated once or at most twice are nearly always sufficient to cure the condition.

At one time we used radium only for haemangiomata. The dose used was a direct application of 20 mg. with .5 Platinum equivalent filter for each square cm. of the lesion. This delivered about 1,000r units to the lesion and the response was good. Radium has the advantage that it can be accurately applied and is not dislodged by the child's movements.

When movement can be controlled, however, we have found better results with less scarring, are obtained with the more equal dissemination of radiation applied with X-rays. The initial treatment is 500r.

The factors are: 60 KV. .1 mm. Copper Filter and 5 cm. F.S.D. This produces almost complete recession of the birth mark in two months but often a further one, or perhaps two, treatments are necessary. These are not applied until the lesion is stationary, i.e. when improvement has stopped. This we find diminishes scarring to the least possible point.

Radium is still occasionally used for the superficial capillary 'strawberry' type of haemangioma (which are often mixed superficial and deep) but these often respond to the X-ray treatment without further radium application.

The results are uniformly successful in the superficial type or any type within reach of radiation. Deep ones will require a more penetrating ray than is suggested above.

b. Plantar Warts, Callosities and Verruca Vulgaris. These painful and unsightly conditions have caused us a great deal of worry and some failures must be recorded. The failures as a rule are the result of insufficient radiation at the first attempt. The great majority, however, respond to the dosage which is now applied and which has been developed to this stage by trial and error. The fact that surgeons are reluctant to operate on the sole of the foot is the reason for our continued search after the correct treatment.

If the callosities are secondary to some defect or deformity in the foot, it is useless to treat them as they will recur unless the real reason for their presence is removed. For instance the inter-thenar callosity of flat foot is often sent for treatment but these disappear without radiation when the flat foot is corrected by orthopaedic means.

The X-ray treatment applied varies according to the thickness of the sole surrounding the wart or callosity.

When the surrounding skin is thin 750r is applied once weekly for three weeks. The factors used are: 60 KV. .1 mm. CU. Filter. F.S.D. 5 cm. If the sole is thick 1,000r is substituted for each treatment and a dose of 1,200r has been used in extremely thick soles, and repeated as above.

Pain is relieved within a week and the lesion separates in from six to ten weeks.

The area treated must extend to an eighth of an inch beyond the visible margin of the lesion. We confine the treatment to this area by the use of lead rubber in which a suitable hole is made.

For verruca vulgaris the same dosage is applied except that as a rule 750r in three weekly doses is used as they are ordinarily found in the thinner skinned areas.

c. Hyperkeratoses. These simple lesions should be treated because they may degenerate into neoplasms. Depending on their size and depth either one treatment of 1,000r or from one to five treatments of 750r daily are given. The factors are: 60 KV. .1 mm. CU. Filter. 5 cm. F.S.D.

d. Pigmented and other Moles. These should *not* be irradiated before removal. They should be removed with diathermy coagulation to exclude any possibility of dissemination of melanotic sarcomatous cells. In our view they should not be excised. If malignancy is suspected the area affected is given a neoplastic dose of radiation after coagulation.

e. Leucoplakia. This condition is treated because of the possibility of malignant degeneration, and a fairly vigorous reaction is required to remove it. On mucous surfaces from two to five daily doses of 750r are administered.

The factors are: 60 KV. .1 mm. CU. Filter and 5 cm. F.S.D.

f. Hyperidrosis—Hands, Feet and Axillae. This distressing condition responds very well to 300r units applied on two successive days and repeated in a week. This double application is given again in a month and after that once more in six weeks should it be necessary.

The factors are: 180 KV. .25 CU. Filter and 50 cm. F.S.D.

g. Pruritis Ani and Vulvae. Pruritis responds very well to a weekly dose of 200r units for four treatments. This should be followed after one month's rest by a repetition of this course. Relief is usually obtained at the second or third week after commencing treatment.

The factors used are: 180 KV. .25 CU. 50 cm. F.S.D.

In young females in whom the condition is fortunately rare, the possibility of sterilization must be remembered and the treatment is then changed to a much softer ray, the factors 60 KV. .1 mm. CU. Filter and 5 cm. F.S.D. being employed. This requires a number of small fields and caution with skin pencil marking of the fields is required so that no overlap of treated areas occurs. 400r are then applied as above.

h. Alopecia Areata. This unusual condition is so rare that we cannot speak with any real authority, but very satisfying responses have been obtained with very small dosage. 75r are applied to fields as for ring worm of the scalp.

The factors used are: 120 KV. 1 mm. AL. Filter. 50 cm. F.S.D. It may be necessary to repeat this course after two to two and a half months.

i. Psoriasis. A very recent development is the treatment of the sella turcica from alternate sides with 100r a day for six days. This course should be repeated in one month.

Only four severe cases have been treated but as these have been completely and so far permanently relieved, the treatment is worth further trial.

The factors are: 200 KV. .5 mm. CU. and 1 mm. AL. Filter and 50 cm. F.S.D.

j. Lichen Planus. Quite a large number of these patients have been treated with very satisfactory results. Treatment is applied to the spinal column over the nerve roots of the area affected combined in the more stubborn case with treatment direct to the lesion. Most cases do not require this application to the lesions.

The spinal nerve roots are given 100r every third day until 700r to 900r have been administered.

The factors are: 180 KV. .25 mm. CU. 1 mm. AL. Filter. 50 cm. F.S.D.

If direct applications are required 120 KV. 1 mm. AL. Filter and 50 cm. F.S.D. are the factors used and 100r administered every third day.

k. Keloids. These irritable and unsightly scars respond extremely well to radiation.

If they are a disfigurement on an unclothed surface they should be excised, and immediately the stitches have been removed X-radiation treatment applied to the scar to prevent a recurrence of the keloids.

200r units are applied daily for four days and this is repeated in one month.

If the scar is not excised surgically a single dose of 400r is applied each month for four months. The response is fairly slow and the breadth of the scar cannot of course be diminished. The redness and irritability, however, disappear and the scar flattens gradually to a white, broad scar.

l. Pterygium. The treatment of pterygium is a recent development and the factors and dosages given may well be altered.

At present it is being combined with operative removal. A pre-operative treatment of four daily doses of 150r units is applied.

The factors are: 60 KV. .1 CU. Filter. 5 cm. F.S.D. This treatment produces a remarkable improvement in the pterygium within three weeks.

At present a post-operative treatment also is being applied, this being a repetition of the above treatment.

The treatment is based on the similarity of pterygium to a keloid, and has so far been successful.

2*b*. SKIN CONDITIONS: INFLAMMATORY

a. Acne. There is still a feeling that radiation treatment of acne results in additional scarring. There is no foundation for this opinion where accurate dosage can be measured and applied. It may have been true in the old days when this measurement was not possible. Results are now uniformly good but are slow, the full result being estimable only at four to six months after treatment.

The treatment is applied with open fields with lead protection to eyelashes, eyebrows and scalp. 100—150r units are administered once weekly for eight weeks and the course repeated after three months.

The factors are: 120 KV. 1 mm. AL. Filter. 50 cm. F.S.D.

One of the gratifying features is the improvement of the keloids which are so disfiguring in this disease.

b. Boils and Carbuncles. These painful lesions must be treated in the first 24 to 36 hours to get the best results. Pain is relieved within six hours and the condition may abort completely.

This treatment may be combined with any other treatment except the application of metallic unguents or lotions.

100r units are given daily at 180 KV. .25 CU. and 50 cm. F.S.D. We have found this shorter wavelength, more penetrating ray gives better results than the longer wavelength group.

c. Dermatophytoses—Particularly affecting the Hands and Feet. These respond very well to radiation. We found, however, that they were very apt to recur and believe that this is due probably to the fact that the mycelium is sensitive to radiation and the spore is not. For this reason and after the condition is apparently cured, treatment is applied once a month for four months.

The whole course is 200r units applied once weekly for four weeks. This is followed by four similar fortnightly treatments and this in turn followed by four treatments at monthly intervals.

The factors are 120 KV. 1 mm. AL. Filter 50 cm. F.S.D.

d. Lupus Vulgaris. This is fortunately an extremely rare condition in this country. This requires dosage equal to that applied to malignant lesions, i.e., from

4,500r to 6,000r applied in daily doses of 750r units, from which a severe reaction results.

The factors used are 60 KV. .1 mm. Copper Filter and 5 cm. F.S.D.

e. Kala Azar. This condition, unknown in this country, was treated here during the war in patients transferred from India. The dosage is the same as for lupus vulgaris. These lesions will not respond to small doses.

f. Herpes Zoster In these cases the spinal root areas of the parts affected are treated with 100r daily for four to six days. It is mainly effective in stopping the intense pain from which some of these patients suffer.

We believe also that if treated in the acute stage it prevents the chronic neuritic pain which occasionally follows the disease.

The factors are: 180 KV. .25 CU. 1 AL. Filter and 50 cm. F.S.D.

g. Granuloma Pyogenicum. This condition also requires heavy radiation treatment to which it responds very well. 750r units are applied daily for four to six treatments.

The factors are: 60 KV. .1 mm. CU. Filter and 5 cm. F.S.D. The tissues surrounding the lesion are protected by lead.

3. LYMPHOID TISSUES

a. Enlarged Chronic Inflamed Tonsils and Adenoids. A great success has attended treatment of tonsils with X-radiation with a very occasional need for a second course of treatment.

The condition is particularly successful in those cases which have recurrent attacks of acute tonsillitis repeated two or three times in a year. Both children and adults have been treated with equal success.

The hyperplasia of adenoidal tissues is treated in exactly the same way as the tonsillar enlargement, and is mainly required when this hyperplasia is interfering with the pharyngeal end of the eustachian tube causing deafness. These patients also have responded remarkably well.

The dosage given is 150r to 200r once weekly. The factors are: 180 KV. .25 CU. 1 AL. Filter and 50 cm. F.S.D. Treatments are given at weekly intervals for six to eight weeks.

b. Chronic Infection of Lymph Glands especially Tuberculosis. Treatment has been applied in the same way as to chronically affected tonsillar tissue and again very satisfying results have been obtained. As above six to eight weekly treatments of 150r are administered to the affected glands.

The factors are: 180 KV. .25 CU. 1 AL. Filter. 50 cm. F.S.D.

4. CHRONIC ARTHRITIS

a. Osteoarthritis. Very considerable relief of pain can be promised if loss of cartilage is not complete in the affected joint. Even in this circumstance, however, considerable relief of pain has been obtained.

100r to 150r are applied twice weekly for four weeks.

The factors are: 200 KV. .5 CU. 1 AL. 50 cm. F.S.D. to hip joint and vertebral column and 180 KV. .25 CU. 1 AL. 50 cm. F.S.D. to knee and shoulder.

b. Spondylitis Ankylopoietica. This condition is only tractable in the active and acute stage. Once calcification of the ligaments has developed this cannot be removed by radiation. It can, however, be prevented from occurring if the condition is treated at the early stages. Pain also is completely relieved.

The vertebral column is divided into three segments one of which is treated daily. To this 100r is administered and the treatment is continued until 1,000r have been administered to each area. This treatment has been varied to save time for patients some distance from home by administering 100r to the whole vertebral column daily until 1,000r have been administered, but this is inclined to make some patients nauseous.

This treatment must be repeated in six weeks to two months, and very occasionally three or four months later; if the pain is recurring a further course may be applied.

The tissues surrounding the vertebral column are protected by lead rubber.

The factors used are: 200 KV. .5 CU. 1 AL. Filter and 50 cm. F.S.D.

5. CALCIFICATIONS

a. Pellegrini Stieda Disease. This traumatic calcification in the vastus medius responds extremely well to radiation, the pain being relieved and the calcification disappearing. It is treated directly with 150r units daily for six successive days.

The factors are: 180 KV. .25 CU. 1 AL. Filter. 50 cm. F.S.D.

b. Calcification in Supraspinatus Tendon. The pain of this condition is also almost immediately relieved and the calcification disappears rapidly. The treatment is the same as in Pellegrini Stieda disease above.

c. Peroni's Disease. This painful calcification appears clinically to be in the fibrous tissue joining the two corpora cavernosa of the penis.

It is treated in the same way as the above two abnormal calcifications and very satisfactory results have been obtained.

6. INFECTIONS

a. Parotitis (not Mumps) *Acute and Chronic.* This painful swelling can be very markedly relieved by 100r units given before any suppurative stage develops. Treatment consists of 100r units daily for four days by which time as a rule the condition is aborted.

The factors are: 180 KV. .25 CU. 1 AL. 50 cm. F.S.D.

b. Arachnoiditis. This condition can be markedly relieved if treated at the stage in which an abnormal number of cells are still present in the cerebral spinal fluid. Later treatment is unsatisfactory.

100r units are applied daily for 10 days to the area affected.

The factors are: 200 KV. .5 CU. 1 AL. Filter. 50 cm. F.S.D.

VERENIGINGSNUUS : ASSOCIATION NEWS

MINUTES OF THE ANNUAL GENERAL MEETING OF THE MEDICAL ASSOCIATION OF SOUTH AFRICA, HELD IN THE NEW SCIENCE LECTURE THEATRE, UNIVERSITY OF CAPE TOWN, ON WEDNESDAY, 21 SEPTEMBER 1949, AT 4 P.M.

Present: The President, Dr. A. W. S. Sichel, was in the Chair. The Honorary Treasurer, Dr. J. S. du Toit; the Medical Secretary, Dr. A. H. Tonkin, and 98 members were present. Dr. J. B. Ritchie, of Regina, Saskatchewan, represented the Canadian Medical Association.

1. Notice convening the Meeting, published in the *Journal* of 27 August 1949, was taken as read.

2. Minutes of the last Annual General Meeting, published in the *Journal* of 25 December 1948, were taken as read and were confirmed and signed.

3. Annual Report of Federal Council, published in the *Journal* of 16 July 1949, was taken as read. There was no discussion and the President moved the adoption of the Report, seconded by Mr. L. B. Goldschmidt. *Carried.*

4. The Financial Report and Balance Sheet, duly audited and published in the *Journal* of 27 August 1949, were presented by the Honorary Treasurer. Dr. du Toit pointed out that 1948 had been considered a transition year and that it had been estimated that there would be a deficit of at least £750. At the end of the year this deficit amounted to £1,661. The main causes of this larger deficit were a decrease in *Journal* advertising amounting to £1,049, an increase in salaries of £1,727 and an increase in Federal Council travelling expenses of £271. This had been offset to some extent by an increase in *Journal* subscriptions of £374, an increase in capitation fees of £125 and a profit in the Agency Department of £378.

In the discussion which followed, the President stated that the expansion of the work of the Association had naturally led to increased expenditure but that it was considered there would be no deficit for 1949.

5. *Benevolent Fund*: The Honorary Treasurer mentioned that at the end of the year under review the accumulated funds in this account stood at £23,846, being in increase of £2,319 over the previous year. Donations, bequests, etc., had brought in £1,247; donations for services rendered accounted for £248 and donations made *in memoriam* amounted to £101. The surplus funds from the Pretoria Congress had been donated to the Fund and amounted to £800. Interest on investments amounted to £774 and £856 was paid out in grants to beneficiaries. Dr. du Toit acknowledged with appreciation the gifts which had been made to the Benevolent Fund under the various headings.

He then moved the adoption of the Report and was seconded by Dr. James Black.

Dr. H. O. Hofmeyr requested information regarding the method of disbursements made from the Benevolent Fund. At the request of the Honorary Treasurer, the Medical Secretary stated that the Fund was administered under a set of rules laid down by Federal Council. Requests were initially made to a local Branch which was required to investigate the circumstances of the case and make a recommendation to the Head Office and Journal Committee. This Committee required full information and a definite recommendation from a Branch Council before it would recommend to Federal Council the making of a grant, which was done in the light of the number of existing beneficiaries and the amount of funds available. He said that the rules laid down that the dependants of members must have first call on the Fund but that the dependants of non-members might benefit should there be sufficient funds available. He added that about two years ago Federal Council had agreed to an amendment to the rules making it possible to increase the amount available for benevolence by an addition from current contributions of an amount not exceeding 50% of the interest accruing from investments.

The adoption of the Financial Report and Balance Sheet was then *carried.*

6. *Election of Auditors:* The Medical Secretary read a letter from Messrs. Gurney, Notcutt & Fisher dated 30 August 1949, in which it was requested that the amount paid in audit fees be raised from 75 guineas to 100 guineas per annum. It was proposed by Mr. L. B. Goldschmidt, seconded by Dr. P. F. H. Wagner, that Messrs. Gurney, Notcutt & Fisher be reappointed auditors for 1950 and that their request for an increase of emolument to 100 guineas be approved. *Carried.*

7. *Canadian Medical Association:* The President then introduced Dr. J. B. Ritchie, the representative of the Canadian Medical Association, and in doing so he mentioned the agreement of affiliation which had been entered into with the Canadian Medical Association. This was received with acclamation. He welcomed Dr. Ritchie as that Association's representative and asked him to convey the fraternal greetings of the Medical Association of South Africa to his colleagues in Canada on his return. The meeting endorsed this sentiment with acclamation.

Dr. Ritchie replied by conveying the greetings of the Canadian Medical Association and spoke with pleasure of his visit to South Africa and the welcome which he had received wherever he had been.

8. *British Medical Association:* The President mentioned that the British Medical Association was represented at the Congress by Dr. W. R. White-Cooper who, unfortunately, was not present. He spoke of the long and close relationship which existed between the two Associations and mentioned the visits of Sir Hugh Lett to East London and Mr. L. R. Broster to Pretoria. As Dr. White-Cooper would not be returning to England, he suggested that the Medical Secretary should write to the Secretary of the British Medical Association, expressing appreciation for the appointment of Dr. White-Cooper as its representative and extending the good wishes of the Association for the future. The meeting agreed with acclamation.

9. *Scientific Exhibition:* Dr. H. O. Hofmeyr proposed, seconded by Prof. R. H. Goetz, that this Annual General Meeting of the Association recommends to Federal Council that the Scientific Exhibits Section of Congress become a feature of future congresses in view of the wide interest which it had aroused.

In the discussion which followed, Dr. Ritchie congratulated the organizers of the Exhibition and said that it was as good as any he had previously seen. He suggested that the same committee should organize the Exhibitions at future Congresses.

Dr. James Black proposed a hearty vote of thanks to those responsible for the organization of the Exhibition; this was accorded with acclamation.

On being put to the vote, Dr. Hofmeyr's motion was *carried.*

There being no other business, the President thanked members for their attendance and the meeting ended at 4.45 pm.

IN MEMORIAM

DR. F. H. NAPIER

By the death of Dr. Francis Horatio Napier, *O.B.E.*, F.R.C.S., Johannesburg has lost one of its medical landmarks.

He came of the family of Napier of Merchistoun, one famous member of which was the discoverer of logarithms. He settled in Johannesburg in 1897. This was not his first coming to South Africa, for he had been for a little time in Cape Town in 1891, but returned from there to practise in Glasgow. He was the first practitioner in Johannesburg, perhaps in South Africa, to be a strict specialist—in ophthalmology—by himself at first, later in partnership with Dr. Brinton.

He took part in public affairs generally, as well as in those of the medical profession, for he was a member for some years of the Legislative Assembly of the Transvaal Colony, and he was President of the Transvaal Medical Association (1904-1905).

In 1931 he was President of the Southern Transvaal Branch of the M.A.S.A. (B.M.A.) and of the Congress held at Johannesburg that year. His presidential address on that occasion somewhat surprised his audience, as it was practically a plea for a State medical service. He was merely seeing ahead and what was the drift of affairs.

Although he had retired from his hospital work and private practice for some years, he never lost interest in Association affairs and not infrequently dropped into Medical House to hear what was happening; also, occasionally, to attend meetings

of the local branch when momentous affairs were being discussed.

A just, upstanding figure of a man, of genial character and with a fine mode of address, his passing is a sad loss to the profession.

Our sympathies go out to Mrs. Napier and his family.

J. H. Harvey Pirie.

PASSING EVENTS

We regret to record the death of Dr. Stephen K. Montgomery at his home at Kalk Bay, C.P., on 26 January 1950, after a prolonged illness.

International Congress: Diseases of the Chest

The First International Congress on Diseases of the Chest will be held at the Carlo Forlanini Institute, Rome, Italy, 17-20 September 1950, under the auspices of the Council on International Affairs of the American College of Chest Physicians and the Carlo Forlanini Institute, with the patronage of the High Commissioner of Hygiene and Health, Italy, in collaboration with the National Institute of Health and the Italian Federation Against Tuberculosis.

Physicians who are interested in attending the Congress should communicate at once with Dr. Chevalier L. Jackson, Chairman of the Council on International Affairs, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois, U.S.A., or with Professor A. Omodei Zorini, Carlo Forlanini Institute, Rome, Italy.

REVIEWS OF BOOKS

Hookworm Disease in China

Studies on Hookworm Disease in Szechwan Province, West China. By K. Chang and Co-Workers. (Pp. 152 + x. With 34 illustrations. $3.00.) The John Hopkins Press. Baltimore: 1949.

Contents: 1. General Introduction. 2. Mulberry Cultivation and Hookworm Infection. 3. The Prevalence and Significance of Hookworm Disease in a Corn—Sweet Potato District in Northern Szechwan. 4. The Prevalence and Significance of Hookworm Disease in a Corn—Sweet Potato District in Eastern Szechwan and a Corn—Sweet Potato Region in Southern Szechwan. 5. Surveys of Hookworm Infections in a Rice District and Among a Group of Vegetable Gardeners. 6. Hookworm Infection in Sugar Cane and Citrus Tree Districts. 7. The Transmission of Hookworm Disease in Szechwan. 8. Species of Hookworm Involved. 9. Suggestions for Control. References.

The admirable role played by the International Health Division of the Rockefeller Foundation in initiating hookworm campaigns throughout the world is well known, and this report on some of the more recent work in China, done under their auspices, is well up to the standard of interest and detail that one has been led to expect from this source.

In the original report of the China Hookworm Commission of 1926 the immensity of the problem was predicted, and this is amply confirmed by the present study. The almost universal use of night soil as a fertilizing agent by Chinese agriculturists makes the effective application of traditional methods of controlling this disease difficult in the extreme, and one of the most interesting features of this survey is its conclusion that the condemnation of this source of fertilizer and the substitution of the sterilized or artificial product is neither practicable nor desirable under the economic and educational standards prevailing in China. Instead, the authors suggest an ingenious modification of the distribution of intercrops, whereby the cultivator's foot does not come into contact with recently fertilized soil.

Mass treatment of infectious cases is put forward as a possible additional method of control. The report is an excellent example of a planned, epidemiological survey thoroughly carried out, and the laboratory and sociological details will be of interest to others planning similar research projects.

Minor Surgery

Minor Surgery. Edited by Sir Heneage Ogilvie, *K.B.E.*, D.M., M.Ch., F.R.C.S. and William A. R. Thomson, M.D. With an introduction by Lord Webb-Johnson, *K.C.V.O., C.B.E., D.S.O.*, T.D. (Pp. 192 + xiv. With 34 illustrations. 14s.) London: Eyre & Spottiswoode Ltd. 2nd revised ed. 1949.

Contents: 1. Minor Surgery. 2. Burns of Slight Degree. 3. Sprains. 4. Bursae and Ganglia. 5. Some Benign Tumours and Cysts. 6. Varicose Veins, Ulcers and Phlebitis. 7. The Hand. 8. The Foot. 9. The Mouth. 10. The Nose and Throat. 11. The Ear. 12. The Eye. 13. The Rectum. 14. The Genito-urinary System. 15. Gynaecology. 16. The Non-operative Treatment of Hernia: Trusses and Belts. 17. Childhood. 18. Anaesthesia and Analgesia. 19. Chemotherapy. Index.

The second edition of *Minor Surgery* has brought this valuable handbook into a further sphere of usefulness for student, postgraduate, and practitioner alike.

It is often with a sense of gratitude that one remembers one has a *Minor Surgery* on the shelf and opens it to recall evasive details of some 'minor' procedure which is minor only if done competently. Merely looking through the list of authors of this particular *Minor Surgery* will dispel any doubts about whether everything in the book may be followed implicitly or not; for their names are for the most part household words in surgery and they are seasoned and successful men.

Some of the procedures described are hardly within the province of minor surgery, e.g. tendon suture; and others (e.g. how to apply elastoplast for varicose dermatitis) are not detailed at all, though they sometimes prove more difficult than one had imagined. It is hardly fair, however, to mention points like these without emphasizing what a tremendous amount of valuable and balanced practical information there is contained in so small a space; especially e.g. the model contribution on the rectum by W. B. Gabriel and the useful advice about trusses in the section by Ralph Coyte.

As a more constructive suggestion one might propose that some existing and other new chapters might have been written by general practitioners themselves. Who better than they are familiar with the pitfalls of minor surgery and what has been found to put them right?

This is a book to have. Up-to-date, to the point and completely authoritative. The introduction by Lord Webb-Johnson is not only a text on minor surgery but also on the doctor-patient relationship in general. It should be read and thought about by everyone.

Minor Personality Disorders

Human Personality and its Minor Disorders. By William Harrowes, M.D., M.R.C.P.E., D.P.M., F.R.S.E. (Pp. 260 + vii. 15s.) Edinburgh: E. & S. Livingstone Ltd. 1949.

Contents: 1. General Principles of Adaptation. 2. Psychobiology and Historical Background. 3. Introduction to Personality Study. 4. Special Analysis of the Psychobiological Assets. 5. The Topical Proccesses and Assets. 6. The Topical Proccesses and Assets (continued). 7. Range and Fluctuation of Fitness with Regard to the Ratio of Work, Play, Rest and Sleep. 8. Social Relations and the Relative Role of Self-dependence and Social Dependence. 9. Sex Development and Patterns. 10. Synthesis and Balance of the Personality. 11. Difficulties and Handicaps. 12. Reaction to Disappointments, etc. 13. Origins of Assets, Liabilities and Determining Tendencies. 14. Minor Personality Disorders. 15. Anxiety States. 16. Obsessive—Compulsive—Ruminative Tension States. 17. Hypochondria. 18. Neurasthenia. 19. Hysteria. 20. Treatment. 21. Bibliography.

This is a badly written book. The subject is important and the author is obviously a capable psychiatrist and a shrewd observer who has something sensible to say, but he writes in such a deplorably heavy, lugubrious and often obscure, manner, that few busy practitioners will bother to wade through his work.

Although it is sometimes hard and often not necessary to avoid repetition, the use of the word *milieu* ten times in 28 lines on page 4 indicates sloppy penmanship. Nor has any author the right to expect his readers to go over sentences

twice or more in order to dig out their meaning; or to turn over page after page of ponderous paragraphs. The whole book is written in this sententious style: 'In the zoological division, however, we meet also movement in the space-time continuum assuming the striking character of locomotion in relation to the environment for the continuation of the life of the organism.' The pert paraphrase, 'animals run for their lives', may not quite suit the author's context but certainly that kind of stuff (including unattached participles) does not suit modern readers who will 'move away from situations interpreted by them as implying the ... restriction of living'. Something more easily put across by simply saying: 'animals move away from danger'.

Anyone who can survive this unrelenting, grinding style will find that the author bases his work on the fact that 'human beings are divided broadly into three groups'; in his own words: 'First, those who, unable to carry the burden of living, had to seek admission to a psychiatric hospital; second, those who had to come for psychiatric help while still supporting their life tasks, although inadequately; and third, those who were facing the rough and tumble of life as being all in the day's work.'

He, very sensibly, notes 'the tendency to make a neurosis out of every worry ...' and offers in his book to achieve three objects: 'First, to provide for all who deal with living human beings a manageable concept of the concrete objective data of human personality as a whole. Second, to establish the principle that psychiatric work of all types must be founded on knowledge of and experience with the personality study of normal persons. Third, to emphasize the indivisibility of a living man and to make clear the supreme importance of studying the actual events of his living as a person in terms of non-dogmatic objective common sense.'

There is a bibliography for further reading and a short index.

Sporotrichosis on the Rand

Sporotrichosis Infection on Mines of the Witwatersrand. Proceedings of the Transvaal Mine Medical Officers' Association. A Symposium. (Pp. 67. With illustrations.) Johannesburg: The Transvaal Chamber of Mines, 1947.

Sporotrichosis, like many fungus infections, runs a chronic course difficult to cure and, happily, is not a disease very commonly encountered in ordinary practice. But that it could become a real industrial hazard, menacing one of the most important industries in this country, has perhaps not been sufficiently realized outside the Mines Medical Service. Sporotrichum is one of the few examples of a pathogenic organism which can live as a free saprophyte in nature. In the Witwatersrand mines the authors discovered it growing on timber and on miners' clothing. Once it became established on human hosts it rapidly spread by ordinary contact. The story of how this outbreak was investigated and eventually controlled is revealed in this interesting symposium. The usefulness of this publication would, however, have been improved by the inclusion of an index, a list of contents, a summary and conclusions.

Electroencephalography

Handbook of Electroencephalography. By Robert S. Ogilvie. (Pp. 137 + ix. With illustrations). Cambridge, Mass: Addison-Wesley Press, Inc. 1949.

Contents: 1. Setting up Electroencephalographic Laboratory. 2. Electrodes and their Placement. 3. How to obtain a Tracing. 4. Interpretation of Electroencephalograms. 5. Portable EEG Service for Small Hospitals. 6. Appendix. 7. Bibliography. 8. Manufacturers of Electroencephalographs.

Electroencephalography has firmly established its special place in the study of neurophysiology and in the examination of the patient suffering from neurological and psychiatric disease. It is, perhaps, the most complicated procedure that falls within the scope of ancillary medical investigations and requires not only very delicate and costly apparatus, but also a skilled electroencephalographer whose clinical experience and special knowledge of electrophysiology will enable him to interpret the recordings which are usually made by a specially trained technician.

It is for the latter that this small handbook has been written. The author was technical assistant to the Gibbses, who are among the pioneer workers in this field, and his experience in their laboratory has enabled him to produce a useful little book which is thoroughly practical and informative. The small details about setting up a laboratory, the space requirements, the shielding and grounding, etc., are most useful and generally unavailable from other sources. The chapter on electrodes and their placement might well have been more detailed. With a good apparatus, suitably housed, the quality of a record will largely depend on satisfactory application of the electrodes and skill in this is the hallmark of the good technician.

In writing on the interpretation of records much more stress should have been laid on the recognition of artifacts; the technician who spots them as the tracing is coming through and is thus able to obviate them will be far more useful in a laboratory than one who spends time trying to interpret a record which should always be the function of the electroencephalographer.

Apart from the EEG technician, this book will also be of great interest to anyone who desires some knowledge of the subject.

CORRESPONDENCE

Corneal Grafting

To the Editor: May I trespass again on your valuable space to reply to Dr. Etzine, who now takes me to task for what he is pleased to call tautology. May I recall him from the fog of his borrowed erudition to remind him that it was he who first criticised the simple statement in my original article, namely 'that it is wasteful to attempt to graft a cornea which is a mass of scar tissue' etc.... I should have thought that further elaboration was unnecessary, but as he saw fit to shed crocodile tears over the countless blind who would on this premise be deprived of a sight-restoring operation, I felt justified in translating the above for him into terms which anyone might understand and which he now complains of as being offensively repetitious.

Dr. Marshall's criticism, based apparently on his own experience of skin grafting, would be reasonable were it not that skin and corneal tissue differ vitally in one respect, viz., that on the continued translucency of the corneal graft depends the whole success of the operation. Like skin, most corneal grafts will 'take', but cornea is sensitive to malign influences to a degree much more subtle than those which might vitiate the success of a skin graft. Incidentally, it is in the field of skin and mucous repairs to lids and sockets that I have learned to treat Wassermann positive cases with respect. Dr. Marshall appears to have been more fortunate.

Interstitial keratitis stands in a class by itself in that one attack appears to confer a life-long tissue immunity on the cornea, whether treated or not. Added to this, in many congenital syphilitics the infection seems to be so mild in degree that interstitial keratitis may be the only stigma, often appearing as late as the third decade, and then only as the result of negligible trauma.

Whatever one's personal definition of the term 'syphilitic' may be, serological tests may evince the only evidence of cryptic syphilis, and unsatisfactory as the explanation for, and sometimes anomalous behaviour of these tests is, they are all we have to go on. Until such time as a more certain test is evolved I prefer to regard a positive serological test as a contra-indication to corneal grafting.

C. J. Blumenthal

C. N. A. Buildings,
Oxford Street,
East London.
13 January 1950.